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ABSTRACT

Intended for physical education teachers, the booklet describes informal and formal methods for evaluating handicapped children to determine whether they can participate in a regular physical education program with nonhandicapped students, in a regular physical education program with modification, or in a specially designed physical education program. Following an explanation of informal and formal assessment are descriptions of the following physical education assessment tools: a sample summary diagnostic form based on observations; I CAN--Primary Skills; I CAN--Sport, Leisure, and Recreation Skills; Assessing and Programing Gross Motor Development for Children; Peabody Developmental Motor Scales; the Portage Guide to Early Education; Project Active; Purdue Perceptual Motor Survey; McCarthy Screening Test; Southern California Motor Accuracy Test; Southern California Sensory Integration Test; Southern California Kinesthesia and Tactile Perception Tests; Southern California Perceptual Motor Test; Ayers Space Test; the Denver Developmental Screening Test; Bruininks-Oseretsky Test of Motor Proficiency; Stott-Test of Motor Impairments; Physical Fitness Test Battery for Mentally Retarded Children; Special Fitness Test for Mildly Retarded Persons; Motor Fitness Testing Manual for the Moderately Mentally Retarded; and Project Unique. Information on each tool usually includes purpose, test age, testing time, content, and areas assessed. A bibliography concludes the booklet. (SB)

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Assessment and Evaluation in Adapted Physical Education

PROJECT DART

SPECIAL POPULATIONS

EC140681

Assessment and Evaluation in Adapted Physical Education

This booklet was produced to be used in conjunction with the information presented in Project Darts Phase I and Phase II Workshops.

Developed by

Charlotte I. Kennedy

Dr. Ernie Bundschuh

A COOPERATIVE PROGRAM OF THE UNIVERSITY OF GEORGIA AND THE DEPARTMENT OF HUMAN RESOURCES UNDER A GRANT FROM THE BUREAU OF EDUCATION FOR THE HANDICAPPED, USOE

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION INSTITUTION

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PROJECT DART

To enhance the assurance of congressional intent, Project DART's major thrust is provision of opportunities for the physical education teacher to increase skills and techniques in working with handicapped students. This will be accomplished through in-service education based on the following:

--All students benefit from physical education.

--Some modification of rules and equipment may be necessary, but basically, the physical education curriculum for the handicapped is the same as for non-handicapped, and should emphasize gross motor development, physical fitness, developmental games and activities, and team, individual, and lifetime sports.

--Physical education instruction must approach each student developmentally, rather than in terms of handicapping conditions.

--Physical educators must be aware of problems, needs, and desires of handicapped students relative to physical education.

--The physical educator must be provided the knowledge and skills to develop programs in physical education, recreation, and related activities for handicapped students. This must include practical, functional, how-to-do-it information and materials.

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Preface

Because of state and federal legislation such as Public Law 94-142 (The Education for All Handicapped Children Act) physical educators have suddenly become concerned with assessment and evaluation in fitness, motor abilities, perception and the motor development of handicapped children. Physical education is the only curriculum area specifically identified in P.L. 94-142's definition of special education. Therefore, physical education must be incorporated in a child's Individualized Educational Plan (IEP).

Assessment and evaluation of handicapped students in physical education programs cannot be ignored or neglected. It is the purpose of this booklet to present to physical educators the types of informal and formal evaluations readily available so that each handicapped child can be assessed in terms of whether to participate in a regular physical education program with non-handicapped students, in a regular physical education program with modification, or in a specially designed physical education program.

Charlotte I. Kennedy
Editor

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Assessment and Evaluation

What is Assessment?

In relation to physical education, assessment is a procedure or testing tool to measure and evaluate basic fundamental skills and motor development.

What is an Informal Assessment?

Informal assessment is a method utilized by physical educators when teaching the handicapped and non-handicapped. It gives the instructor an idea of what basic fundamental skills the student has achieved and also what areas of motor development the student needs improvement in.

All children regardless of these abilities should acquire these fundamental motor skills that would allow them to successfully interact with others and their environment.

Why Informal Assessment?

With informal assessment, the instructor can see which skills the students are least and most able to perform. Secondly, with information gathered during informal assessment, the instructor has an idea where to establish the baseline of teaching and at what level to begin instruction. And third, if informal assessment shows a signifcant lag in motor development, a formal assessment test can be utilized in determining a child's level of developmental abilities.

What is Formal Assessment?

A formal assessment is a reliable evaluation instrument which assesses the child's motor abilities. A formal testing instrument has means, standard deviations, reliability and validity measures and/or norm references based on standardized sample groups.

Why Formal Assessment?

Public Law 94-142 is one of the major concerns and topics in today's educational field. Because of this

we need reliable instruments to assist in implementing each stage of this law.

After identifying students with disabilities and handicaps, through the use of screening tests and checklists, the physical educator can go one step further with formal assessments. These formal testing instruments are of assistance to the instructor in two ways: First, they help define the nature and extent of the special education services that each child needs. Secondly, the IEP calls for reassessment every three years. Formal testing tools can assist in meeting these standards.

The assessment/evaluation instruments can be used in a variety of ways. Some physical educators may find a screening or general motor proficiency measurement device to allow identification that a problem or deficiency exists. Physical education program content might be established through other types of assessments and then monitored through progress schedules from yet other instruments. Curriculum embedded and criterion referenced tests may allow appropriate evaluation of present levels of performance.

Physical Education Assessment Tools

There are several performance sheets and programs available to informally and formally assess students. Many of the following screening tests, checklists, and programs may be used.

Informal Assessments

Summary Diagnostic Observation
I CAN: Primary Skills
I CAN: Sport, Leisure & Recreation Skills
Assessing & Programming Gross Motor Development For Children
Peabody Developmental Motor Scales
The Portage Project
Project Active

Formal Assessments

Physical Fitness Test Battery for Mentally Retarded Children
Denver Developmental Screening Test
Bruininks-Oseretsky Test
Purdue Perceptual Motor Survey
Stott-Test of Motor Impairment
Ayers Battery of Perceptual Motor Tests
McCarthy Screening Test
Project Unique
Special Fitness Test for Mildly Mentally Retarded Persons
Motor Fitness Testing Manual for the Moderately Mentally Retarded

A Sample Summary Diagnostic Form Based on Observation

An informal assessment can be either a published program, an adaptation of a program, or a checklist developed by an individual physical educator. No matter what type of assessment is used, a simple observation checklist can be helpful in identifying a child's movement patterns and skills. Given within the text is an adaptation of the Summary Diagnostic Form Based on Observation (Sherrill, 1977, p. 64-71).

SUMMARY DIAGNOSTIC FORM BASED ON OBSERVATIONS

List major health problem or handicapping condition.

1._____

2._____

Which seems to be the student's physical education preference and/or strength?

Dance	Developmental Exercise	Individual Sports
Aquatics	Gymnastics, Stunts	Team Sports

In which developmental state of play should (s)he be classified?

Solitary or paralleled	Games and dance with "I" emphasis
Cooperative or shared	Activities emphasizing team or group goals
Small group (6 or less)	Regulation sports, dance, aquatics

In which developmental stage of cooperation should (s)he be classified?

Competes with self against own best performance
Tries to attain specific individual goals
Cooperates with others in achievement of a team goal
Competes against one another
Cooperates with partner in competition against 2 opponents
Cooperates with team members in competition against a team

Can participate in games based upon the following locomotor activities and/or motor skills:

walk	dodge	bounce
run	squat	dribble
leap	throw	catch
jump	kick	volley
hop	strike	pivot
tag	bat	

Can participate in rhythmic or dance activities based upon the following locomotor movements and/or basic skills:

walk	gallop	waltz
run	slide	two-step
leap	skip	polka
jump	step-hop	bleking
hop	schottische	draw

Which problems of proprioception does the pupil exhibit?

duplication of specific joint position	static balance
imitation of movements	dynamic balance
directional accuracy in moving objects	spatial orientation
distance accuracy in moving objects	size estimation
weight discrimination	force production

In comparison with the average of other children in the group, which behaviors does this child exhibit to a greater degree than the others?

motor awkwardness	distractability
poor spatial orientation	perseveration

immature body image	social imperception
negative self-concept	low frustration tolerance
loneliness	crying
self-destructive acts	aggression toward others

Diagnostic Evaluation of Ball Handling

1. Circle answers which best describe ball handling behaviors.

TASK	THROWING	KICKING
Uses same limb consistently	Yes No Right Left	Yes No Right Left
Uses same limbs in opposition	Always Usually Seldom	Always Usually Seldom
Transfers weight	Always Usually Seldom	Always Usually Seldom
Aims accurately	Always Usually Seldom	Always Usually Seldom
When aim is inaccurate, it usually goes too far in which directions?	Right Left Left Low Inconsistent	Right Left Left Low Inconsistent

In comparison with the average of other children in the group this pupil can be described best in the physical education setting by which phrases? Circle only under each heading.

Attention	Memory	Imitation
attentive	remembers well	imitates easily and
average	and retains	well

Attention	Memory	Imitation
nonattentive	remembers fairly well	imitates fairly well
distracted	forgets easily	average
confused	never remembers	imitates little and with difficulty
not there		can do things only his own way
scatterbrained		

Initiative	Understanding of Instructions or Explanations	Mental Flexibility
a self-starter	grasps instructions	receptive to new ideas
has considerable initiative	understands after asking questions	average
average	average	prefers the old and familiar
responds to prodding	confused, but knows he doesn't understand	resents change
	thinks he understands, but really doesn't	perseverates
	confused and helpless	

(Sherrill, 1977, pp. 64-71)

I CAN Instructional System

I CAN is a nationally validated, objective-based instructional system designed to improve the delivery of physical education services to handicapped populations. It can be used by physical education specialists, classroom teachers or a combination of both. Design specifications resulted in a program which:

1. provides for diagnostic-prescriptive teaching of students who range in abilities from near zero competency to functional competency in a wide variety of physical performance skills and knowledge;
2. is responsive to the needs of local educational agencies to either develop a complete program or to select materials to supplement an already existing program;
3. is not dependent on exotic equipment and/or facilities; and
4. provides for user compliance with P.L. 94-142 and other accountability laws when implemented as intended.

The system consists of two major components: A Teacher Implementation Guide provides the information necessary to appropriately use the instructional materials. Secondly, the instructional resources encompass preschool (2-5 years), primary (5-14 years), and secondary (15-25 years) levels, guiding the systematic teaching of a variety of physical education content (termed performance

objectives in the program). Inservice procedures and materials have also been developed to guide the education of teachers and teacher consultants in the use of the system.

The Implementation Guide provides the information necessary to conduct:

1. program planning;
2. long-term planning;
3. assessment of student status;
4. prescription of instruction based on assessed materials; and
5. implementation of teaching-learning objectives, associations and prescriptions.

The preschool skills are divided into:

--seven locomotor skills
--six object control skills
--six play equipment skills
--five body control skills
--five participation and play situation skills

Each primary skill has two key areas which are listed below:

Fundamental skills--
1. Locomotor and rhythmic skills
2. Object control

Body Management--
1. Body awareness
2. Body control

Health and Fitness--
1. Fitness and growth
2. Posture

Aquatics--
1. Basic swim skills
2. Swimming and water entry

Sport, Leisure & Recreation Skills (Secondary)

Four modules:

1. Team Sports
2. Dance & Individual Sports
3. Backyard/Neighborhood Activities
4. Outdoor Activities

Materials included in each module:

--Curriculum guides

--Performance objectives - list what learner is expected to do, stated in behavioral terms

--Assessing activities - gives organized ways to introduce performance objectives

--Instructional activities - provides proven methods for teaching each skill component

--Assessment records - record and monitor student and class performance

--Game books - keyed to specific performance objectives

--Implementation guide - shows teachers and administrators how to identify and establish goals for programs

Assessing and Programming Gross Motor Development for Children

Purpose: This program provides an Individual Motor Program model including the Ohio State University SIGMA (Scale of Intra-Gross Motor Assessment), a criterion reference assessment tool which offers flexibility in assessing basic motor skill development of normal, mentally retarded and developmentally delayed children of preschool or elementary age. In addition, a link between assessment and program implementation is provided through the P.B.C. (Performance Base Curriculum), a program of eleven basic fundamental skills with sequential and progressive instructional experiences designed for each level of a skill.

Basic Motor Skills:

1. Walking
2. Stair climbing
3. Running
4. Throwing
5. Catching
6. Jumping
7. Hopping
8. Skipping
9. Striking
10. Kicking
11. Ladder climbing

Peabody Developmental Motor Scales

The Peabody Developmental Motor Scales were designed as indicators of gross and fine motor skills occuring in children between birth and seven years of age. The Scales allow the examiner to obtain knowledge about the skills the child has mastered, those (s)he is currently developing, and those not in his repertoire.

The Scales are accompanied by a program of activities designed to teach each skill thus identified. These activities allow the examiner to precisely recomment a motor program tailored to fit each child's needs. It is assumed that the recommended program will include activities to fill developmental gaps, to strengthen emerging skills and to set objectives for skills not obtained.

The Scales rely on observation of the child as well as administration of the items by the examiner and actual participation by the child. Some items may be reported by the child's parent or teacher. Procedures for the administration of each item are contained with the item and not in a separate section of the Scales.

An information sheet is provided at the beginning of the Scales which contains pertinent information, such

as the child's name, sex, date of birth, date of evaluation, general health appearance and handicapping conditions.

What is measured	How measured
Gross Motor	Ability to perform some 205 specified gross motor tasks at stipulated age levels from birth through seven years old
Fine Motor	Ability to perform some 130 specified fine motor tasks at stipulated age levels from birth through six years old

The Portage Project

The Portage Guide to Early Education is a developmentally formulated program for children from birth to six years of age. The Project is designed to improve the adjustments of a child at school as well as at home. The Portage comes in three parts: 1) a checklist of behaviors on which to record and individual child's developmental progress; 2) a color-coded card file listing possible methods of teaching these behaviors; and 3) a manual of directions for use of the checklist and card file as well as a method for implementing activities.

Developmental Areas:

1. Cognitive
2. Self-help
3. Motor
4. Language
5. Socialization

Purpose: By referring to the standardized checklist in the areas of Infant Stimulation, Socialization, Language, Self-help, Cognitive and Motor, the child's developmental stages can be determined and decisions made as to whether further evaluation is needed.

Project Active

"Motor Ability and Physical Fitness"

Project Active is used by educators to organize, conduct and evaluate individualized-personalized physical education programs for the normal, mentally retarded, learning disabled and emotionally disturbed students, pre-kindergarten through adulthood. The competency-based training program and curriculum for improving motor and physical performance in students have been validated as successful and cost effective.

Purpose: That all children with handicapping conditions are provided physical education experiences. The model kit and program include instructions for individualized-personalized programs for children with low motor ability, low physical vitality, postural programs, nutritional deficiencies, learning disabilities, breathing problems, motor disabilities and communication disorders.

Assessment Components:

A. Motor Ability Test

1. Gross Body Coordination
2. Balance/Postural Orientation
3. Eye & Hand Coordination
4. Eye & Hand Accuracy
5. Eye & Foot Accuracy

B. Physical Fitness Test

1. Arm & Shoulder Strength - Static Arm Hang
2. Abdominal Strength - Modified Sit-ups
3. Explosive Leg Power - Standing Broad Jump
4. Cardiorespiratory Endurance - 200 yd. run (age 6-11), 8-minute run (age 12-13), 12-minute run (age 14-18).

Formal Assessments

After using a screening list or informal assessment, it can be determined if a student is delayed in the areas of perception, motor development, fitness and/or motor proficiency. These children should then be assessed through formal testing, which determines the nature and extent of the special physical education services that the child needs.

A list of formal (published) assessments and programs that are useful when working with the handicapped population are categorized into four groups:

A. Perceptual

1. Purdue Perceptual Motor Survey
2. McCarthy Screening Test
3. Ayers Battery of Perceptual Motor Tests

B. Developmental

1. Denver Developmental Screening Test

C. Motor Proficiency

1. Bruininks-Oseretsky Test
2. Stott-Test of Motor Impairment

D. Fitness

1. Project Unique
2. Physical Fitness Test Battery for Mentally Retarded Children
3. AAHPER Special Fitness Test for Mildly Mentally Retarded Persons
4. Motor Fitness Testing Manual for the Moderately Mentally Retarded

The Purdue Perceptual Motor Survey

The Purdue Perceptual Motor Survey is a survey which allows educators to observe a broad spectrum of behavior within a structured set of circumstances. This assessment tool can be used to identify children who may be deficient in the perceptual motor abilities necessary for acquiring academic skills.

Test age: 6-10 years

What is measured	How measured
Balance and posture	Walking forward, backward, sideways on walking board; performing a series of eight tasks evaluating ability to jump, hop, and skip while maintaining balance
Body image and differentiation	Identification of body parts, imitation of movement, obstacle course activities, Kraus-Weber Test, angels in the snow.
Perceptual-Motor Match	Making circle, double circle, lateral line on chalkboard, performing eight rhythmic writing tasks.
Ocular control	Ocular pursuits of both eyes, right eye, left eye and convergence are tested.
Form perception	Seven geometric forms - circle, cross, square, triangle, horizontal diamond, vertical diamond, and divided rectangle are drawn on sheet of paper.

(AAHPER, 1976)

McCarthy Screening Test

Purpose: This test is designed to help identify children who may be developmentally lagging. The test assesses performance in cognitive and sensorimotor domains.

Test Age: 4-6½ years

Test Time: 20-30 minutes

Content: Right Left Orientation assesses the child's knowledge of right and left in reference to his or her own body, and with reference to an illustration of a child. Learning disabled children and those with perceptual disorders often show confusion in laterality.

Verbal Memory is a graded series of words and sentences that tests the child's ability to repeat what he or she has heard. This ability is important developmentally if the child is to move ahead in communication skills.

Draw-A-Design tests the child's ability to copy nine designs and capture the details and configuration of the total design. Perception of the real world is reflected in the child's analysis of a design and ability to treat it as a whole figure. Copying of designs is often used to detect neurological impairment.

Numerical Memory is a digit-span test that measures the child's ability to repeat numbers forward and backward. It tests immediate memory, quantitative ability, attention to the task, and ability to reproduce information received aurally.

Conceptual Grouping uses a set of twelve blocks that vary in size, shape, and color. The test assesses the child's ability to deal logically with objects, to classify, and to generalize--abilities that are vital for coping with school tasks at all grade levels.

Leg Coordination requires the child to perform

tasks--walking backward, walking on tiptoe, walking a straight line, standing on one foot, skipping--that give the examiner a chance to observe the child's balance, stance, and coordination. The child's maturity of motor coordination is an important indicator of developmental level.

Southern California Motor Accuracy Test

Purpose: a) to measure degree of and changes in sensorimotor integration of upper extremities of individuals with nervous system dysfunction, and b) to assist in making diagnosis of perceptual-motor dysfunction in young children.

Application: The task involves testing the hand-eye coordination function involving sensory information from eyes, touch, and proprioceptors integrated together, along with motor planning and upper motor neuron functioning.

Those Tested: 1) the clumsy child, 2) persons over age 4, 3) persons with sensorimotor involvements as involuntary motion, gross tremor, spasticity, flacid type paralysis, or apraxia.

Application: The test consists of an irregular printed black line approximately 51 inches long. This line is centered before the child so that he must cross the midline of his body. He is to trace over the line without getting off. Each hand is used and scores are developed separately for the most accurate and least accurage hand.

Scoring: Based on the 1) distance in inches over which the pencil was off the line, 2) the extent of error, and 3) the time taken to complete the tasks.

Scores Obtained:

1. Accuracy Score - The sum of all printed line point deductions is subtracted from 500 (a measure of motor performance accuracy).
2. Adjusted Score - The recording time in seconds to complete task. For each full 10 seconds, one point is deducted from Accuracy Score (measures motor accuracy and motor speed).
3. Standard Score - The Accuracy Score can be converted into a Standard Score by dividing the difference between the subject's score and the mean score for his age group, by the standard deviation for his age group.

Southern California Sensory Integration Test

(Figure-Ground Perception Test)

Purpose: To assist in the determination of deficits in visual perception which requires selection of a foreground figure from a rival background.

Test Age: 4-10 years

Test Time: 5-15 minutes

Uses: Identification. The test is designed to detect a deviation in perceptual function which is reflected in the visual domain by difficulty in separating visual stimuli from a rival background.

Training: Scores, when studied in relation to performance on other perceptual-motor tests, can suggest methods of remedial training.

Research: 1) Figure-ground visual perception deficit may be found in developmental lags and deviation in children and in many kinds of brain dysfunctions in both children in adults. 2) There is some evidence that figure-ground visual perception is related to the higher brain functions reflected in intelligence tests and behavioral observations. 3) It is thought that the ability to discriminate visually a foreground figure from its background is a function not only of visual perception but of a general CNS integrating mechanism related to other sensory modalities in addition to vision. 4) It is also suggested that scores be used in association with other perceptual-motor test results in interpreting perceptual learning and behavioral disorders.

Scoring: Each correctly identified embedded object is given a score of one. Computating a STANDARD SCORE is made by dividing the difference between the subject's score and the mean for his age by the Standard Deviations for his age. Maximum score for any plate is three points. After five misses the test is stopped. The

total number of correct choices after missing five is the subjects RAW SCORE.

Interpretation: Use of the Normative Data Conversion Table enables the examiner to convert RAW SCORES (by age level) to STANDARDIZED SCORES. STANDARDIZED SCORES having a (-) value may be interpreted as below the mean for age level; those having a (+) value may be interpreted as being above the mean for the age level. Scores falling within one standard deviation from the mean are considered within normal limits.

Southern California Kinesthesia and Tactile Perception Tests

The SCKT consists of six tests for evaluation of dysfunction in somesthetic perception. The conceptual framework within which these tests are used centers around hypothesized central nervous system mechanisms which integrate somatic sensation.

Test Age: 4-8 years

Test Time: 15-20 minutes

Six Tests:

1. K-Kinesthesia - This test is dependent upon the interpretation of impulses from joint receptors. The test requires subject with vision occluded to place his finger on a point at which finger had been placed by examiner.
2. M-Manual Form Perception - This is a test of intersensory integration. It involves identifying wooden geometric forms held in the hand.
3. F-Finger Identification - This test requires subject to point to the finger previously touched. This is a test of tactile perception and for perceptual-motor integration.
4. G-Graphesthesia - test ability to draw designs from memory.
5. L-Localization of Tactile Stimuli - test recall of sensory function (touch).
6. D-Double Tactile Stimuli Perception - This test measures the tendency of the subject to extinguish the perception of one tactile stiumuli or two tactile stimuli applied simultaneously to cheek and/or hand.

Scoring:

K-score - low indicates a disorder in an intersensory mechanism integrating somatic and visual stimuli

M-score - must be interpreted in relation to other scores.
F-score - can indicate (1) disorder of the mechanism underlying praxis, (2) poorly developed neurological integration, or (3) tactile defensiveness.
G-score - dysfunction of tactile perception
L-score - disorder of the mechanism related to tactile perception and motor planning.
D-score - can indicate (1) generalized deviations in neurological, (2) apraxia, and (3) tactile defense.

Interpretation: The scores falling within one standard deviation from the mean are within normal limits. Performance below that level represents various degrees of dysfunction. Performance falling below three standard deviations can be considered to reflect severe dysfunction.

Southern California Perceptual Motor Test

The six subtests in this battery are designed to evaluate dimensions of perceptual-motor function in children ranging in age from four to eight years. The subtests are:

1. Imitation of Postures - This test requires the subject to assume a series of positions or postures demonstrated by the examiner. Execution of the task is believed to require motor planning. The examiner assumes the mirror image of the postures as they appear on the protocol sheet, while the subject is expected to assume the mirror image of the examiner. There are twelve postures which are scored on the basis of the amount of time required for the subject to imitate each posture correctly. The subject is awarded two points for assuming the correct posture in three seconds or less, one point for assuming the correct posture in more than three seconds but less than ten seconds, and zero points if the subject does not assume the correct posture within ten seconds.

2. Crossing the Mid-Line of the Body - This is a test of the tendency to avoid crossing the mid-line of the body with the hand. It is interpreted as reflecting the degree of integration of function of the two sides of the body. This test requires the subject to touch either his ear or eye on the same or opposite side of his body. The objective in scoring is to give credit for crossing the mid-line of the body without penalizing for poor motor planning. The subject is awarded two points for touching the correct side of his face with the correct hand; one point for starting with the incorrect hand but changing before touching his face; one point for the correct hand starting to the wrong side of the face but changing before touching the face; and zero points for using the wrong hand to touch the correct side or using the correct hand to touch the wrong side of the face.

3. Bilateral Coordination - This test requires smoothly executed movements of and interaction between both

upper extremities. It involves motor planning and bilateral integration. The examiner must evaluate the ability of the two upper extremities to move together in a smoothly integrated pattern. The subject must imitate the movements of the examiner after they have been demonstrated. The movements involve touching the hands to the thighs in a quick, light slap. Coordination ability is judged largely on the timing and smoothness of the interaction of the two hands in relation to each other. Scoring is based on smoothness of execution and interaction of the hands. The subject is awarded two points for a correct imitation after one demonstration, and one point for a correct imitation after two demonstrations, and zero points if the second attempt is poorly executed.

4. Right-Left Discrimination - This test involves discriminating right from left on self, another person, and location of an object. The subject is awarded two points for a correct response in less than three seconds, one point for a correct response in more than three seconds but less than ten seconds, and zero points for an incorrect response.

5. Standing Balance: Eyes Open - This test measures the ability to balance on one foot with the eyes open. The subject must stand on one foot with his arms folded for as long as he is able. He must then repeat the same procedure on the other foot. The score is the total number of seconds for both the right and left foot up to 180 seconds on each foot.

6. Standing Balance: Eyes Closed - This test is the same as the Standing Balance: Eyes Open test, but it eliminates visual perception and its contribution to balance. The subject receives the same instructions and is scored in the same manner.

Ayers Space Test

Purpose and Application: This test is intended to "measure space relations: namely the speed of perception of stimuli composed largely of spatial elements, position in space, and space visualization. This test is designed to use with subjects age three through adulthood who have or are suspected of having perceptual difficulty.

Materials: Two formboards (one diamond shape, one egg shape); eight blocks (four egg shape, four diamond shape); and four wooden pegs.

The four similarly shaped blocks differ in that each has a hole drilled in one of four different positions; thus, each formboard, with a change in the peg, presents a different problem.

Test Time: 25-30 minutes

Procedure: The subject is given a series of problems to solve. Each problem is scored either right or wrong, and each problem is timed. Once the subject misses ten, the remaining test items need not be given.

Scoring:

A. Accuracy Score (raw score) - total correct choices
B. Time Score - total number of seconds required for decision on all items attempted
C. Adjusted Score - subtract TIME SCORE points from ACCURACY SCORE
D. Standard Score - use Table 2 in manual to convert ADJUSTED SCORE to STANDARD SCORE

Primary Space Factors:

A. Perceptual Speed - involves recognition of geometric scores
B. Space Orientation - requires a perceptual ability in which the subject is the orgin or point of reference

C. Space Visualization - requires mental manipulation of parts of the stimulus pattern rather than imagining their appearance after rotation

Interpretation: By observing types of items missed, the examiner obtains insights into kind of space ability most deficient in subjects. The most significant observations are: 1) form perception, 2) sense of position in space, and 3) visualization of movement.

A low TIME SCORE suggests the presence of disinhibition. This is seen frequently in brain-damaged children. A good ACCURACY SCORE lowered by a high TIME SCORE is typical of very conscientious individuals who have perceptual limitation. It also may identify individuals fearful of making mistakes.

Neurological Conditions:

A. Hemianopsia - Blindness of one-half of vision in one or both eyes. Subject will usually turn head to see.

B. Disregard of one half space - Subject will usually pick block on non-involved side.

The Denver Developmental Screening Test

Test Age: two weeks-six years

Test Time: approximately 30 minutes

The Denver Developmental Screening Test (DDST) consists of a kit of inexpensive materials, a score sheet and a reference manual.

Standard Test Materials:

1. red yarn ball
2. raisins
3. rattle with narrow handle
4. eight one inch square blocks
5. small glass bottle
6. small bell
7. tennis ball
8. pencil

Procedure: Mark chronological age on score sheet. Ask child to perform activities to the right of the mark. If child cannot perform skills, regress to next age level. Some questions may need to be answered by parents.

Scoring: By comparing child's achievement on the test with his chronological age line drawn on the score sheet, one can determine if child is developing in a satisfactory manner or at a lower rate.

Areas Covered:

Personal-Social - Performing basic skills: smiling, pulling toys, interactive games

Fine Motor Skills - Eye-hand coordination: copying drawing, lifting

Language Skills - Responding to sound, vocabulary, speech, colors, opposition analogies

Gross Motor Skills - Assesses ability to lift head, sit, roll, stand, walk, kick, hop, throw, etc.

Developmental deviations in young children are difficult to detect. It is usually not until the child experiences failure in school that parents and physicians are alerted to a developmental impairment.

The DDST is valuable to the professional for three basic reasons:

1. To screen children for possible problems.
2. To confirm intuitive suspicions with an objective measure.
3. To monitor high-risk children such as those who have experienced perinatal difficulties.

Bruininks-Oseretsky Test of Motor Proficiency

Short Form

Purpose and Application: The Bruininks-Oseretsky Test of Motor Proficiency is an individually administered test that assesses the motor functioning.

Test Age: 4½-14½ years

Test Time: 15-20 minutes

Content: Each of the eight subtests is designed to assess motor development. Four of the subtests measure gross motor skills, three measure fine motor skills, and one measures both gross and fine motor skills.

Gross Motor Skills: 1) Running Speed & Agility, 2) Balance, 3) Bilateral Coordination, 4) Strength,

Gross & Fine Motor Skills: 5) Upper Limb Coordination,

Fine Motor Skills: 6) Response Speed, 7) Visual Motor Control, 8) Upper Limb Speed and Dexterity

The Bruininks-Oseretsky Test was developed to provide educators, clinicians, and researchers with information regarding the status of motor skill development in children, help in developing and evaluating motor training programs, and in assessing serious motor dysfunctions and developmental delays.

Normative data includes standard scores for each age group, percentile ranks and stanines. Age equivalents are also provided for each of the eight subtests.

Stott-Test of Motor Impairment

Purpose: To assess and ascertain motor impairment of functional, or presumed neurological orgin.

Test Age: 5-16 years

Scoring: The children failing to pass test items for their age level are tested at lower levels until they pass the items listed in that category.

The test usefulness as seen by the developers:

1. A screening instrument
2. Individual assessment
3. A correlation to other handicaps
4. A technique which might contribute to our understanding of motor function and dysfunction

The five skill categories:

1. Control and balance of the body while immobile
2. Control and coordination of the upper limbs
3. Control and coordination of the body while in motion
4. Manual dexterity with emphasis on speed
5. Task which emphasizes simultaneous movement and precision

Example of Test Item:

Balance

Age:	
Sub 5	= Heel-toe Balance
5	= Toe Balance
6	= One Leg Balance
7	= One Leg Balance, arms raised
8	= Stork Balance
9	= Board Balance I
10	= Board Balance II
11 & 12	= Two Board Balance
13 +	= One Foot-toe Balance

Physical Fitness Test Battery For Mentally Retarded Children

Purpose: This test is designed to measure the physical fitness levels of the mentally retarded population, eliminating the intelligence factor of the individual.

Test Age: Norms have been established for the TMR & EMR individuals in age groups of 9-12, 13-16, and 17-20 for both males and females.

What is measured

Speed	25-yard dash
Static muscular endurance of arm/shoulder girdle	Bent arm hang
Muscular endurance of leg and abdomen	Leg lift
Static balance	Static Balance Test
Agility	Thrust
Cardiorespiratory endurance	300-yard run/walk

Special Fitness Test

for Mildly Mentally Retarded Persons

Comments: Norms based on random sample of 4,200 mildly mentally retarded boys and girls throughout the United States.

Test Age: Mildly mentally retarded, 8-18 years

Components of Test Items:

Components	Test Items
Arm & Shoulder Girdle Strength	Flexed Arm Hang
Abdominal & Hip Flexor Muscles	Sit-ups
Speed & Agility	Shuttle Run
Explosive Muscular Power	Standing Broad Jump
Speed	50-yard Dash
Skill & Coordination	Softball Throw
Cardiovascular Efficiency	300-yard Run/Walk

Motor Fitness Testing Manual

for the Moderately Mentally Retarded

Test Age: Moderately mentally retarded, 6-21 years

Components of test items: Same elements as AAHPER Special Fitness Test for the Mildly Mentally Retarded plus:

Components	Test Items
Height	Height
Weight	Weight
Flexibility	Sitting Bob & Reach
Developmental Skills	Hopping
	Skipping
	Tumbling Progression
	Target Throws

Project Unique

The Physical Fitness and Performance of Sensory and Orthopedically Impaired Youth

Purpose: A three-year federally funded project designed to study and establish normative data for sensory and orthopedically handicapped children, ages 10-17, throughout the United States.

What is measured	How measured
Body composition	Skin folds
Dynamic Strength/Endurance	Sit-ups, leg & trunk raise, pullups
Agility	Shuttle run, rise to stand, mat creep
Static Balance	Stork stand
Flexibility	Sit & reach
Static Muscular Strength	Grip strength, flexed arm hang
Explosive Muscular Strength	Standing long jump, 50 yard dash, softball throw
Cardiorespiratory Function	9 or 12 minute run

For measurement in each fitness area, guidelines for adaptations of testing the visually and orthopedically impaired are given.

Between the Charts

Because of the growing interest of education, and the passing of Public Law 94-142, physical educators have been made aware of the handicapped population in public schools. It is now the physical educator's responsibility to be able to utilize informal and formal assessment tools with the handicapped and non-handicapped population. Besides defining the nature and extent of the special education needed, the physical educator can go one step further--by reading between the charts.

Test results alone seldom provide all the answers for the handicapped child. The understanding and knowledge physical educators possess about normal growth and development plus results from informal and formal assessments gives the physical educator what he needs to make valid judgements about each child.

Observe not only a child's weaknesses but also focus on the child's developed strengths. Set up the child's program with emphasis on both his weaknesses and strengths. This allows the program to be rewarding for both the teacher and student by initiating skills and tasks the child can perform with success. If a child sees himself performing successfully in some skilled areas, the willingness to participate in the undeveloped skill area is

greater, thus, making the teaching situation easier for the physical educator.

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Note: The six tests originally published in 1972 and identified in this manual have been combined into one battery of tests. Besides the six original tests, two new instruments (Position in Space and Design Copying) have been formulated to complete the new battery. The six tests are as follows:

Ayers Space Test
Southern California Kinesthesia & Tactile Perception Test
Southern California Motor Accuracy Test
Southern California Perceptual-Motor Test
Southern California Sensory Integration Test

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